AMENDMENTS TO THE CLAIMS

Claim 1 (Cancelled)

2. (Currently Amended) The sulfur-capturing liquid according to claim 22, wherein;

~~said oil sample is a petroleum product, a semi-finished petroleum product serving as the starting material thereof or a C_{1-8} alcohol, and~~

said solvent is a petroleum product, a semi-finished petroleum product ~~serving as the starting material thereof~~ or a C_{1-8} alcohol ~~for the catalyst~~.

3. (Currently Amended) The method of producing the sulfur-capturing liquid according to claim 22, comprising:

subjecting the mixed solution to a first filtration to remove the silver acetate,

irradiating the solution with electromagnetic waves or corpuscular rays to precipitate ~~said silver sulfide containing~~ silver compounds and/or silver~~,~~ produced by a reaction with impurities which might be contained in the solution,

subjecting the solution to a second filtration to remove said silver compounds and/or silver,

allowing a nitrogen gas to flow into the solution to remove dissolved oxygen, and

adding an aldehyde or ammonia to prevent oxidation and improve the long-term shelf life.

4. (Currently Amended) The method of preparing a sulfur-containing liquid according to claim 3, wherein:

~~said oil sample is a petroleum product, a semi-finished petroleum product serving as the starting material thereof or a C_{1-8} alcohol,~~

said solvent is a petroleum product, a semi-finished petroleum product ~~serving as the starting material thereof~~ or a C_{1-8} alcohol ~~for the catalyst~~,

said electromagnetic waves or corpuscular rays are X-rays having longer wavelengths than the L absorption edge wavelength of silver and containing the absorption edge wavelength of sulfur, and

said aldehyde is formaldehyde, acetaldehyde or benzaldehyde.

5. (WITHDRAWN) An apparatus for producing the liquid catalyst according to claim 1, comprising a radiation source for purifying the catalyst, to irradiate said mixed solution with the electromagnetic wavers or corpuscular rays in order to precipitate said silver sulfide-containing silver compounds and silver.

6. (WITHDRAWN) The apparatus for producing a liquid catalyst according to claim 5, wherein said radiation source for purifying the catalyst is an X-ray source for purifying the catalyst to irradiate X-rays having longer

wavelengths than the L absorption edge wavelength of silver and containing the absorption edge wavelength of sulfur.

7. (Currently Amended) A method of preparing an oil sample for X-ray fluorescence analysis of the concentration of sulfur in said oil sample, comprising:

allowing a nitrogen gas to flow into the sulfur-~~containing~~-capturing liquid of claim 22 to remove dissolved oxygen,

adding the sulfur-~~containing~~-capturing liquid to ~~said~~ an oil sample collected in a sample holder and stirring them,

irradiating the stirred solution with electromagnetic waves or corpuscular rays to precipitate ~~silver sulfide containing~~ silver compounds and/or silver, and

adding ammonia or an aldehyde to dissolve the silver compounds and/or silver other than ~~silver sulfide containing~~ sulfur compounds, whereby the ~~silver sulfide containing~~ sulfur compounds are left as precipitates on a window in the bottom of said sample holder.

8. (Currently Amended) The method of preparing an oil sample according to claim 7, wherein:

said oil sample is a petroleum product, a semi-finished petroleum product ~~serving as the starting material thereof~~ or a C_{1-8} alcohol,

the solvent in said sulfur-~~containing~~-capturing liquid is a petroleum product, a semi-finished petroleum product ~~serving as the starting material thereof~~ or a C_{1-8} alcohol ~~for the catalyst~~, and

the electromagnetic waves or corpuscular rays for irradiation to said stirred solution are X-rays having longer wavelengths than the L absorption edge wavelength of silver and containing the absorption edge wavelength of sulfur.

9. (WITHDRAWN) An X-ray fluorescence spectrometer for analyzing the concentration of sulfur in an oil sample by the preparation method described in claim 7, comprising:

a pretreatment radiation source for downward irradiating said stirred solution with said electromagnetic waves or corpuscular rays, and

an analytical X-ray source for upward irradiating a window in the bottom of said sample holder with primary X-rays.

10. (WITHDRAWN) An X-ray fluorescence spectrometer for analyzing the concentration of sulfur in an oil sample by the preparation method according to claim 8, comprising:

a pretreatment X-ray source for downward irradiating said stirred solution with the X-rays having longer wavelengths than said L absorption edge wavelength of silver and containing the absorption edge wavelength of sulfur, and

an analytical X-ray source for upward irradiating a window in the bottom of said sample holder with primary X-rays.

11. (WITHDRAWN) The X-ray fluorescence spectrometer according to claim 10, wherein the X-rays irradiated by said pretreatment X-ray source are X-rays monochromated in the absorption edge wavelength of sulfur.

12. (Currently Amended) A method of preparing an oil sample for X-ray fluorescence analysis of the concentration of sulfur in said oil sample, comprising:

allowing a nitrogen gas to flow into the sulfur~~-containing~~-capturing liquid of claim 22 to remove dissolved oxygen,

adding the sulfur~~-containing~~-capturing liquid to said oil sample and stirring them, and

irradiating the stirred solution with electromagnetic waves or corpuscular rays and filtering the solution through a filter membrane, to separate ~~silver sulfide containing~~ silver compounds and/or silver on said filter membrane.

13. (Currently Amended) The method of preparing an oil sample according to claim 12, wherein:

said oil sample is a petroleum product, a semi-finished petroleum product ~~serving as the starting material thereof~~ or a C_{1-8} alcohol,

the solvent in said sulfur-~~containing~~-capturing liquid is a petroleum product, a semi-finished petroleum product ~~serving as the starting material thereof~~ or a C_{1-8} alcohol ~~for the catalyst~~, and

the electromagnetic waves or corpuscular rays for irradiation to said stirred solution are X-rays having longer wavelengths than the L absorption edge wavelength of silver and containing the absorption edge wavelength of sulfur.

14. (Currently Amended) A method of preparing an oil sample for X-ray fluorescence analysis of the concentration of sulfur in said oil sample, comprising:

adding a silver nitrate solution ~~having silver nitrate dissolved in a solvent~~ and a sodium acetate solution ~~having sodium acetate dissolved in said solvent~~, as a sulfur-~~containing~~-capturing liquid to said oil sample collected in a sample holder and stirring them, and

irradiating the stirred solution with electromagnetic waves or corpuscular rays to precipitate ~~silver sulfide containing~~ silver compounds and/or silver on a window in the bottom of said sample holder.

15. (Currently Amended) The method of preparing an oil sample according to claim 14, wherein:

said oil sample is a petroleum product, a semi-finished petroleum product ~~serving as the starting material thereof~~ or a C_{1-8} alcohol,

said solvent is a C_{1-8} alcohol for the sulfur-~~containing~~-capturing liquid, and

said electromagnetic waves or corpuscular rays for irradiation to said stirred solution are X-rays having longer wavelengths than the L absorption edge wavelength of silver and containing the absorption edge wavelength of sulfur.

16. (Original) The method of preparing an oil sample according to claim 15, wherein the X-rays for irradiation to said stirred solution are X-rays monochromated in the absorption edge wavelength of sulfur.

17. (Currently Amended) A method of preparing an oil sample for X-ray fluorescence analysis of the concentration of sulfur in said oil sample, comprising:

adding a silver nitrate solution ~~having silver nitrate dissolved in a solvent~~ and a sodium acetate solution ~~having sodium acetate dissolved in said solvent~~, as a sulfur-~~containing~~-capturing liquid to said oil sample and stirring them, and

irradiating the stirred solution with electromagnetic waves or corpuscular rays and filtering the solution through a filter membrane, to separate ~~silver sulfide-containing~~ silver compounds and/or silver on said filter membrane.

18. (Currently Amended) The method of preparing an oil sample according to claim 17, wherein:

said oil sample is a petroleum product, a semi-finished petroleum product ~~serving as the starting material thereof~~ or a C_{1-8} alcohol,

said solvent is a C_{1-8} alcohol for the sulfur-~~containing~~-capturing liquid, and

the electromagnetic waves or corpuscular rays for irradiation to said stirred solution are X-rays having longer wavelengths than the L absorption edge wavelength of silver and containing the absorption edge wavelength of sulfur.

19. (Original) The method of preparing an oil sample according to claim 18, wherein the X-rays for irradiation to said stirred solution are X-rays monochromated in the absorption edge wavelength of sulfur.

20. (WITHDRAWN) An X-ray fluorescence analysis method for analyzing the concentration of sulfur in the oil sample, comprising:

adding a silver nitrate solution having silver nitrate dissolved in a solvent and a sodium acetate solution having sodium acetate dissolved in said solvent, as a liquid catalyst to the oil sample collected in a sample holder and stirring them,

upward irradiating a window in the bottom of said sample holder with primary X-rays to precipitate silver sulfide-containing silver compounds and

silver on said window while measuring the intensities of fluorescent X-rays emitted from the oil sample.

21. (WITHDRAWN) The X-ray fluorescence analysis method according to claim 20, wherein:

said oil sample is a petroleum product, a semi-finished petroleum product serving as the starting material thereof or a C_{1-8} alcohol, and

said solvent is a C_{1-8} alcohol for the catalyst.

22. (Currently Amended) A sulfur-capturing liquid used in a method of preparing an oil sample for X-ray fluorescence analysis to determine the concentration of sulfur in the oil sample which comprises

providing a mixed solution of silver nitrate dissolved in a solvent and sodium acetate dissolved in a solvent,

~~precipitating and~~ removing silver acetate precipitated from the mixed solution, and

irradiating the mixed solution to precipitate silver sulfide and/or silver which is removed from the ~~missed~~ mixed solution to form the sulfur-capturing liquid substantially free of sulfur and solid substances and containing the remaining silver nitrate and sodium acetate solution.